

REMARKS/ARGUMENTS

Claims 13, 18-20 and 27-31 are active in this case.

Claims 13 and 31 (which is a withdrawn process claim) have been amended to define the N-terminal sequence of the pea PA1b albumin as ASCNGVCSPF, i.e.,

X<sub>1</sub> satisfies the sequence y<sub>1</sub>y<sub>2</sub> wherein y<sub>1</sub> represents alanine and y<sub>2</sub> represents serine,

X<sub>2</sub> satisfies the sequence y<sub>3</sub>y<sub>4</sub>y<sub>5</sub> wherein y<sub>3</sub> represents asparagine, and y<sub>4</sub> glycine and y<sub>5</sub> represents valine;

X<sub>3</sub> satisfies the sequence y<sub>6</sub>y<sub>7</sub>y<sub>8</sub>y<sub>9</sub>y<sub>10</sub>y<sub>11</sub>y<sub>12</sub> wherein y<sub>6</sub> represents serine, y<sub>7</sub>, y<sub>11</sub> and y<sub>12</sub> each represent proline, y<sub>8</sub> represents phenylalanine.

Support for this amendment is found on page 14, lines 14-21, Figure 7 and the sequence listing of record in this case.

The rejections of Claims 13 and 18-20 or 13, 18-20 and 27-30 under 35 U.S.C. §112, first paragraph on the basis of alleged lack of written description and supporting enablement are respectively traversed.

Neither rejection is believed to be applicable in light of the claim amendments submitted herein, that is, the N-terminal sequence of the pea PA1b albumin protein. In other words, the source species and a defining structural feature coupled with functional language, e.g., insecticidal activity, has been provided in the amended claims. The application unquestionably describes the activity of such a polypeptide as an insecticide. Further it is noted that the inclusion of Claims 27-30 in the enablement rejection appears to be a mistake as each of these claims define specific sequences of the protein.

In Figure 4 of Example 1 of the specification, Applicants provide mortality rates for *oryzae* weevils exposed to at least 9 different types of legumes (see page 9, lines 27- 37).

Therefore, the specification unquestionably describes the polypeptides utilized in the claimed methods and demonstrates Applicants' possession of the claimed invention.

The specification as filed provides sufficient instruction to enable a person skilled in the art to make and use the invention commensurate in scope with Claims 13 and 31. Figure 4 of Example 1 of the specification (see page 9, lines 27- 37) provides mortality rates for *oryzae* weevils exposed to several types of legumes tested, including cowpea (*Vigna unguiculata*), white and red bambara groundnut (*Vigna subterranea*), lentil (*Lens esculenta*), french bean (*Phaseolus vulgaris*), mung bean (*Vigna radiata*), adzuki bean (*Vigna angularis*), broad bean (*Vicia faba*), chickpea (*Cicer arietinum*), and lupin (*Lupinus albus*). Because all legumes tested were toxic against a sensitive strain of weevils but not against a resistant strain, the Applicants reasonably concluded from the results that the same mechanism for causing insect toxicity is involved in all legumes tested (see page 10, lines 1-16). The toxicity assay provided in Example 1 can be applied to any plant of interest in order to determine the mortality curve or pattern for a given insect pest so that polypeptide candidates having insecticidal activity and comprising a motif defined by formula I insecticidal activity in plant samples tested according to the method disclosed in Example 1,

Withdrawal of both rejections is requested.

Applicants reiterate their request for the withdrawal of Claim 31 for being drawn to a non-elected invention. The claimed method for protecting plants (Claim 13) and the claimed method for protecting cereal seeds or products derived from cereal seeds (Claim 31) both utilize the same polypeptides of the present invention defined by formula I:

$X_1CX_2CX_3CX_4CX_5CX_6CX_7$  (SEQ ID NO:1). Therefore, it would not be an undue burden to search the prior art to identify all references that disclose the utilization of polypeptides defined by formula I for killing insect pests to protect plants and to protect products derived

from plants. Claim 31 has been amended in the event that the Examiner finds the withdrawal improper.

For information purposes, attached is a draft of an article that has been recently submitted for publication (Petit et al). This document demonstrates the insecticidal activity of 2 isoforms of pea PA1b (AJ574794 and AJ574795) which are different of both the PT and the Pa1b protein disclosed in the present application (see the alignment below):

PT	1	ASCNGVCSPFEMPPCG	SACRCIPVGLV	GYCRNPSG	37
Pa1b	1	ASCNGVCSPFEMPPCG	SACRCIPVGLV	GYCRNPSG	37
AJ574794	1	ASCNGVCSPFEMPPCG	SACRCIPVGLV	GYCRNPSG	37
AJ574795	1	ASCNGVCSPFEMPPCG	SACRCIPVGLV	GYCRNPSG	37

This document contains a reference to an US patent (5,955,082) and its Canadian counterpart, which disclose an insecticidal composition comprising “the protein-rich fraction of a legume extract”. This U.S. patent is cited in the attached IDS. The active ingredient of this protein-rich fraction is not believed to be a PA1b albumin, in particular because its activity is destroyed by heating at 100°C (example 6 of US 5,955,082), which is not the case for the PA1 b albumins (page 14, lines 33-37 of the instant application).

Applicants also request allowance of this application.

Respectfully submitted,

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